

Application No.: 09/965417

Case No.: 56233US002

REMARKS

Claims 1 to 23 are pending. Claim 12 has been canceled. Claims 1, 13-15, 21 and 23 are amended. The basis for amendments can be found in the application as filed, as explained in more detail below. Thus, no new matter has been added by these amendments. Reconsideration of the above-referenced application in view of the foregoing amendments and the following remarks is respectfully requested.

§ 112 Rejections

The Examiner has rejected claims 1-23 of the present application under 35 USC § 112, first paragraph, as failing to comply with the written description requirement. The Examiner has objected to the term "a fixed angle of at least 5 degrees."

The Applicants respectfully traverse this rejection and submit that the limitation of rotation by at least 5 degrees is fully supported by the application as filed. For example, the specification states, at page 11, lines 8-9, that "[p]olarization rotators typically rotate the polarization of light by at least 5°, 10°, 25° or more." In addition, originally filed claims 10 and 12 can serve as basis for this limitation.

Furthermore, the Applicants have amended independent claims 1, 15, and 21 to clarify that the recited polarization rotator element is "configured and arranged to rotate a polarization axis of the light that is transmitted by the polarizing element by at least 5 degrees from the polarization axis of the polarizing element to align with another polarization axis." The basis for the amendment can be found in the application as filed, for example, at p. 11, lines 6-9, p. 24, line 22 – p. 25, line 5, and originally filed claims 10 and 12. Independent claims 1 and 21 further require that "forming the aligned liquid crystal layer comprises fixing the liquid crystal material in an aligned configuration." The basis for this amendment can be found in the application as filed, for example, at p. 35, lines 8-11.

Therefore, the amended claims are fully supported by the application as filed.

§ 103 Rejections

The Examiner has rejected claims 1-14, 21 and 22 under 35 USC § 103(a) as being unpatentable over British Patent Application 2,326,727 (hereinafter "'727 Application") in view of

Application No.: 09/965417

Case No.: 56233US002

PCT Publication No. WO 98/04651 (hereinafter "PCT '651"). In addition, the Examiner has rejected claims 15-17, 20 and 23 under 35 USC § 103(a) as being unpatentable over the '727 Application in view of British Patent Application 2,324,881 (hereinafter "'881 Application") and PCT '651. The Applicants respectfully traverse these rejections and submit that the amended claims are patentable over the cited references.

The '727 Application, alone or in combination with other cited references, does not teach or suggest the claimed inventions. As explained in Applicants' January 27, 2005 Response, this reference is directed to a method of making a cell wall of a liquid crystal spatial light modulator ("SLM") and to a cell wall made by such a method. It does not teach or suggest methods of making films. Furthermore, the liquid crystal layer (6) of the '727 Application is configured to function as a spatial light modulator, the orientation of which can be altered by application of voltage to the electrodes (4) and (10) provided on both sides of the liquid crystal layer (6) to selectively alter the orientation of portions of the liquid crystal layer. The electrodes are segmented to define pixels of the SLM. ('727 Application at p. 16, lines 6-8, see also p. 17, lines 14-17). These features of the spatial light modulator allow it to be used to generate images containing information. ('727 Application, p. 8, lines 9-12; p. 19, lines 9-10). Therefore, the liquid crystal material of the '727 Application is not fixed, as required by claims 1 and 21, or cured, as required by claim 15. If it were, the SLM device of the '727 Application would not work for its intended purpose, because the immobilized liquid crystal material could not reorient in response to applied voltage.

PCT '651 is directed to a combination of optical elements including at least one retardation film 15 and at least one reflective polarizer 14. The retardation film 15 converts the main part of the circularly polarized component transmitted by the reflective polarizer 14 into linearly polarized light. The Examiner has agreed (see e.g., Office Action mailed March 24, 2004) that this combination of optical elements does not include a polarization rotator element as claimed in the present application.

Neither the reference itself nor knowledge available to one of ordinary skill in the art would provide one with motivation to use the elaborate cell wall configuration described above to make a polarization rotator that is "configured and arranged to rotate a polarization axis of the light that is transmitted by the polarizing element by at least 5 degrees from the polarization axis

Application No.: 09/965417

Case No.: 56233US002

of the polarizing element to align with another polarization axis.” That would be wasteful and inconsistent with SLM’s intended purpose of generating images. In addition, PCT ‘651 discloses an optical retardation film having properties completely different from those of the polarization rotators of the present application, which furthermore is disposed outside of the liquid crystal cell 18. The Applicants respectfully submit that one of skill in the art would not be motivated to combine these different elements with inconsistent functions to arrive at the claimed methods. There is also no indication that such could be accomplished with a reasonable expectation of success.

The ‘881 Application, alone or in combination with other cited references, also does not teach or suggest the claimed methods. In particular, the ‘881 Application is directed to a patterned optical element. The patterned layer of the ‘881 Application has regions that differ in the way they affect polarized light, which is useful in pixilated display screens. (The ‘881 Application, p. 1, lines 1-7). Fig. 4 of the ‘881 Application illustrates that the completed patterned element is provided with gaps 14’ between the cured regions of the layer 14. The gaps 14’ are characterized as “having no twisting effect on incident linear polarized light” and possessing “a different optical property to that of the remaining cured layer regions 14.” (The ‘881 Application, p. 14, lines 6-12). The same is apparent from Fig. 7, which shows discrete regions of the layer 14 aligned with regions A and C of the LC display device, while the gaps are aligned with the regions B and D of the display device. In other embodiments, different regions of the reactive mesogen composition are cured at different temperatures in order to fix different twist angles in different regions of the layer. (The ‘881 Application, p. 5, last paragraph, and p. 13, lines 17-24). As a result, regions having different optical properties, i.e., different polarization rotation angles due to the different twists of the mesogens in different regions, are produced. (The ‘881 Application, p. 6, lines 3-6 and p. 4, lines 12-20).).

On the contrary, the amended claims of the present application all require that the recited polarization rotator element is “configured and arranged to rotate a polarization axis of the light that is transmitted by the polarizing element by at least 5 degrees from the polarization axis of the polarizing element to align with another polarization axis.” The patterned optical element of the ‘881 Application does not teach at least that claim element, because the polarization axes of light exiting the patterned element are oriented at different angles in different regions and thus cannot

Application No.: 09/965417Case No.: 56233US002

be aligned with any one particular polarization axis as required by all present claims.

Furthermore, neither the reference itself nor knowledge available to one of ordinary skill in the art would provide one with motivation to combine this reference with the '727 Application or PCT '651 to arrive at the claimed methods with a reasonable expectation of success.

For at least the foregoing reasons, claims 1, 15 and 21, as well as dependent claims 2-11, 13, 14, 16-20, 22 and 23, comply with the written description requirement and are patentable over the cited references. The Applicants hereby request withdrawal of the Examiner's rejections.

In view of the above, it is submitted that the Application is in condition for allowance. Reconsideration of the Application is respectfully requested and allowance of claims 1-11 and 13-23 at an early date is earnestly solicited.

Respectfully submitted,

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Date

By: Anna A. Kobilansky
Anna A. Kobilansky, Reg. No.: 53,146
Telephone No.: (651) 737-8345

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833